Amendment to the Claims

1. (Previously Presented) In a fiber optic communications network having a transmitter and a receiver connected by an optical transmission line, the receiver having multiple output data channels for providing signals to terminal devices, each output data channel including a demodulator to detect and recover a received valid data signal, and a network including at least one optical amplifier having a shutdown input, a system for detecting a disconnect in the optical transmission line comprising:

means connected to each demodulator for an output data channel for sensing the presence of a received valid data signal which includes correct data content;

means for detecting whether a predetermined number of received valid data signals for the multiple output data channels are present at a predetermined number of the multiple demodulators; and

means for activating the shutdown input of the optical amplifier if the predetermined number of received valid data signals is not detected.

2. (Previously canceled)

3. (Previously Presented) The system of Claim 1 wherein said means for determining whether a predetermined number of received valid signals are present includes means for formulating a ratio of the number of received valid data signals are present to the number of operational demodulators.

4. (Previously Presented) A fiber optic WDM communications network comprising:

multiple wavelength transmitters and multiple wavelength receivers connected by a WDM optical transmission system;

said multiple wavelength receivers including multiple channel receivers for providing data signals to terminal devices, each of said channel receivers including a demodulator to detect and recover a valid received data signal at a correct data rate, and for generating an output signal;

an optical amplifier coupled to said optical transmission line, said optical amplifier having a shutdown input;

means connected to said demodulators for sensing the absence of said valid data signals;

means for determining whether a predetermined number of said valid data signals are present, and for generating a shutdown signal when said predetermined number is insufficient, wherein said means for determining includes a counter for counting the number of said demodulators in operation, and wherein said number of valid data signals is less than the predetermined majority number of operating demodulators; and

means for applying said shutdown signal to said optical amplifier shutdown input to thereby terminate optical amplifier operation.

5. (Previously Canceled)

6. (Previously Presented) A fiber optic WDM communications network comprising:

multiple wavelength transmitters and multiple wavelength receivers connected by a WDM optical transmission system;

said multiple wavelength receivers including multiple channel receivers for providing data signals to terminal devices, each of said channel receivers including a demodulator to detect and recover a valid received data signal with correct coding, and for generating an output signal;

an optical amplifier coupled to said optical transmission line, said optical amplifier having a shutdown input;

means connected to said demodulators for sensing the absence of said valid data signals;

means for determining whether a predetermined number of said valid data signals are present, and for generating a shutdown signal when said predetermined number is insufficient, wherein said determining means includes means for determining whether a predetermined majority number of said demodulators have detected a valid data signal and for generating a ratio of the number of valid data signals present to the number of operational demodulators; and

means for applying said shutdown signal to said optical amplifier shutdown input to thereby terminate optical amplifier operation.

7. (Previously Presented) A method for detecting a disconnect in an optical transmission line of a fiber optic communications network having a transmitter and a receiver connected by the optical transmission line, the receiver having multiple output data channels for providing data signals to terminal devices, each output data channel including a demodulator to detect and recover a received data signal, and a network including at least one optical amplifier having a shutdown input, the method comprising:

sensing at the demodulator the presence of a valid data signal having a correct data format;

detecting whether a predetermined number of valid data signals are present at the demodulators; and

activating the shutdown input of the optical amplifier if the predetermined number of valid data signals is not detected.

8. (Previously Canceled)

9. (Previously Presented) The method of Claim 7 wherein determining whether a predetermined number of valid data signals are present includes:

formulating a ratio of the number of valid data signals present to the number of operational demodulators.

10. (Previously Presented) An optical node for transmitting and receiving a wavelength-division multiplex (WDM) signal and having at least one amplifier associated with the optical node, comprising:

a demultiplexer for separating multiple wavelengths from the WDM signal and outputting the multiple wavelengths;

a plurality of receive wavelength adapters that each receive one of the multiple wavelengths outputted from the demultiplexer, wherein each of the plurality of receive

wavelength adapters monitors a data signal of their inputted wavelength and outputs a loss of signal in response to invalid data content; and

a shutdown-restart control that receives loss of signal outputs from each of the plurality of receive wavelength adapters and in response to a predetermined number of loss of signal outputs, activating a mechanism to shut down at least one amplifier associated with the optical node.

11. (Previously Presented) The optical node of claim 10, wherein each of the plurality of receive wavelength adapters output a loss of signal in response to one or more of the following: if the received power of the inputted wavelength is lost, the received power is random noise, the received power is a signal that is in wrong data format, the received power is a signal that is at a wrong data rate, the inputted wavelength has a wrong identification code or the inputted wavelength has a wrong signal trace code.

12. (Previously Presented) The optical node of claim 10, wherein the at least one associated optical amplifier amplifies the received WDM signal.

13. (Previously Presented) The optical node of claim 10, wherein the at least one associated optical amplifier amplifies a WDM signal transmitted by the optical node.

14. (Previously Presented) The optical node of claim 13, wherein the at least one associated optical amplifier is located at the optical node.

15. (Previously Presented) The optical node of claim 13, wherein the at least one associated optical amplifier is located remotely from the optical node.

16. (Previously Presented) The method of Claim 10 wherein determining whether a predetermined number of valid data signals are present includes:

formulating a ratio of the number of valid data signals present to the number of operational receive wavelength adapters.